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(54) Title of the Invention

Picture Book which Generates Sounds

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(57) What we claim is :

A picture book which generates sounds, characterized in that an IC memory/ memories which stores/store a plurality of music notes, voices, words or a combination thereof, a piezo-electric speaker, and a battery are provided on a substrate, a plurality of sheets of paper which display a picture/pictures and a sentence/sentences which correspond to the above-mentioned plurality of music notes, voices, words or a combination thereof are provided in such a manner to be freely opened, a plurality of switches provided on the substrate are

arranged along the edges of the sheets of paper, and a display which indicates the corresponding one of the above-mentioned switches is attached to part of each sheet of paper.

#### Detailed Explanation of the Invention

The present invention relates to a picture book which generates sounds which incorporates an electronic music box, an electronic voice generating device, etc., and plays music relating to each sheet of paper by operating a switch indicated for each sheet of paper.

As a conventional picture book which generates sounds, a Sono-sheet (registered trade mark) is attached to each sheet of paper, and that Sono-sheet is taken out and a music is reproduced by playing the Sono-sheet on a reproduction device, or each sheet of paper is formed individually as a sheet, a magnetic recording band is provided at the back face of each sheet while a picture/pictures or a sentence/sentences is/are provided on the front face thereof, and a music or words is or are reproduced while looking at the picture/pictures or the sentence/sentences.

A conventional picture book as described above requires a separate reproducing device, is disadvantageous in cost, and furthermore is difficult to be operated by a small child. Therefore it is difficult to achieve a picture

book for a small child which generates sounds, by the above-mentioned conventional means.

The present invention has been achieved in view of the above-mentioned problems and situations, and the purpose of the present invention is to provide a picture book which generates sounds excellent for the development of intelligence of small children and emotional and sentimental education of small children by playing music, songs of a small bird, short words or a combination thereof associated with sheets of paper (pages) used by simple operations which even a small child can perform for sure, so that interests of a small child both in pictures and music may be satisfied by operations by a small child.

In order to achieve the above-mentioned purpose, the present invention is constituted as follows : an IC memory/memories which stores/store a plurality of music notes, voices, short words or a combination thereof, a piezo-electric speaker, and a battery are provided on a substrate having a certain thickness, a plurality of sheets of paper which display a picture/pictures and a sentence/sentences which correspond to the above-mentioned plurality of music notes, etc., are provided in such a manner to be freely opened, a plurality of switches provided on the substrate are arranged in the direction of height of the sheets of paper along the one

edge of each of the sheets of paper, and a code which indicates the corresponding one of the above-mentioned switches is attached to an edge of each sheet of paper.

In the following, we shall explain one preferable example embodying the present invention by referring to the drawings.

Fig. 1 is an obliquely seen view which shows a picture book in an opened state in accordance with the present invention, and Fig. 2 is a obliquely seen perspective view which shows a playing device.

A square substrate 1 of a thick sheet form is provided with a concave section 101, and furthermore, there are provided a plurality of upwardly and outwardly open concave sections 103, ... with a certain interval in the lengthwise direction along the outer longitudinal edge section 102 thereof, and the concave sections 103,... are separated and divided by protruding sections 104,... respectively. In the concave section 101 are provided an IC memory 2 which constitutes a sound generating element for an electronic music box, a piezo-electric speaker, 3 and a battery 4, and switches 5,...are provided respectively in the concave sections 103 along the outer edge section. The switch 5 consists of a main body 501 in which a contact is provided, and a depressing switch knob 502, and each of the switches 5,... is connected to the battery 4 and the IC memory 2

through a lead wire 601 and a lead wire 602. The IC memory 2 is connected to the piezo-electric speaker 3 and the battery 4 through a lead wire 603 and a lead wire 604. In this example embodying the present invention, wiring for only one switch is shown, but other switches are connected by respective lead wires in a similar manner. For the IC memory, use is made of the one which stores music, voices such as songs by a bird and short words, and although only one IC memory is shown in the drawing, it is actually a combination of a plurality of memory chips.

The upper face of the above-mentioned substrate 1 is covered with a sheet 701 excluding the outer edge section 102 where the switches 5, ... are provided, and the substrate 1 may practically form a back cover and the sheet 701 may practically constitute the last page of a picture book.

With the substrate 1 as a back cover, a plurality of sheets 702,... are glued at the back so that they may open freely, the outermost portion is made to be a front cover 703, the inner sides 704 of these sheets 702,... and the front cover 703 are glued, and the backbone 705 of a book is formed by combining them with the inner section of the substrate 1.

The sheets 702,... constitute sheets of paper 710 of a picture book with the right and left pages 706 and 707 in

an opened state, and a picture 708 and a sentence 709 associated with it are displayed there. Such a picture 708 and a sentence 709 are displayed on each sheet as the opened right and left pages as one set, musics whose number correspond to the number of the opened sheets of paper are memorized in an IC, and there are provided a corresponding number of switches 5,... mentioned above.

A code 711 is displayed at the surface of the edge on the side of the switches 5,... of the sheet of paper 710, the code 711 is displayed to correspond to a switch 5A by which to play the music for the said sheet of paper in an open state, and each code 711 is displayed at a position corresponding to a respective switch of each sheet of page at a position which is different for each sheet of page.

In this manner, a picture book 7 is constituted.

Next, let us discuss the effects and actions thereof.

A small child opens the picture book 7, for example, page 1, looks at the picture 708, reads the sentence 709, and understands the content thereof. In the drawing of the sheet of paper 710 in an open state, the code 711 is displayed at the right edge, and with this as an indicator code, the knob 502 of the switch 5A corresponding to the said code 711 is depressed. By this action, the said memory reproduction circuit of the IC memory described above is closed, music reproduced is

amplified through the speaker 3, and one can hear the playing of the music corresponding to the content of the said sheet of paper. Once the switch is depressed, the reproduction is made to the end. Since the IC memory stores a plurality of musics, it is possible to reproduce musics corresponding to the contents of the respective sheets of paper in sequence by depressing respective switches corresponding to the respective sheets of paper while turning the pages.

In the above-mentioned example embodying the present invention, we have explained it in terms of reproduction of music, but it is possible to reproduce sounds made by animals such as songs by a bird or short words, and it is also permissible to combine them and reproduce musics, animal sounds and words for each sheet of paper.

As mentioned above, in accordance with the present invention, while a small child is looking at a picture or a sentence of a picture book, the small child can reproduce and hear musics, etc. associated with the content of such a picture or a sentence, and it is desirable for the development of intelligence of a small child and for the education of a small child. The above can be achieved by a simple operation of depressing a switch by a small child by looking at a code, and the action of hearing music while looking at a picture book which is desirable for the development of intelligence



can be simply performed by a small child himself or herself.

#### Simple Explanation of the Drawings

Fig. 1 is an obliquely seen view of a picture book in an open state and Fig. 2 is an obliquely seen perspective view of a reproducing device.

In the drawings, 1 is a substrate, 2 is an IC memory, 3 is a piezo-electric speaker, 4 is a battery, 5 is a switch, 7 is a picture book, 708 is a picture, 709 is a sentence, 710 is a sheet of paper and 711 is a display.

Fig. 1

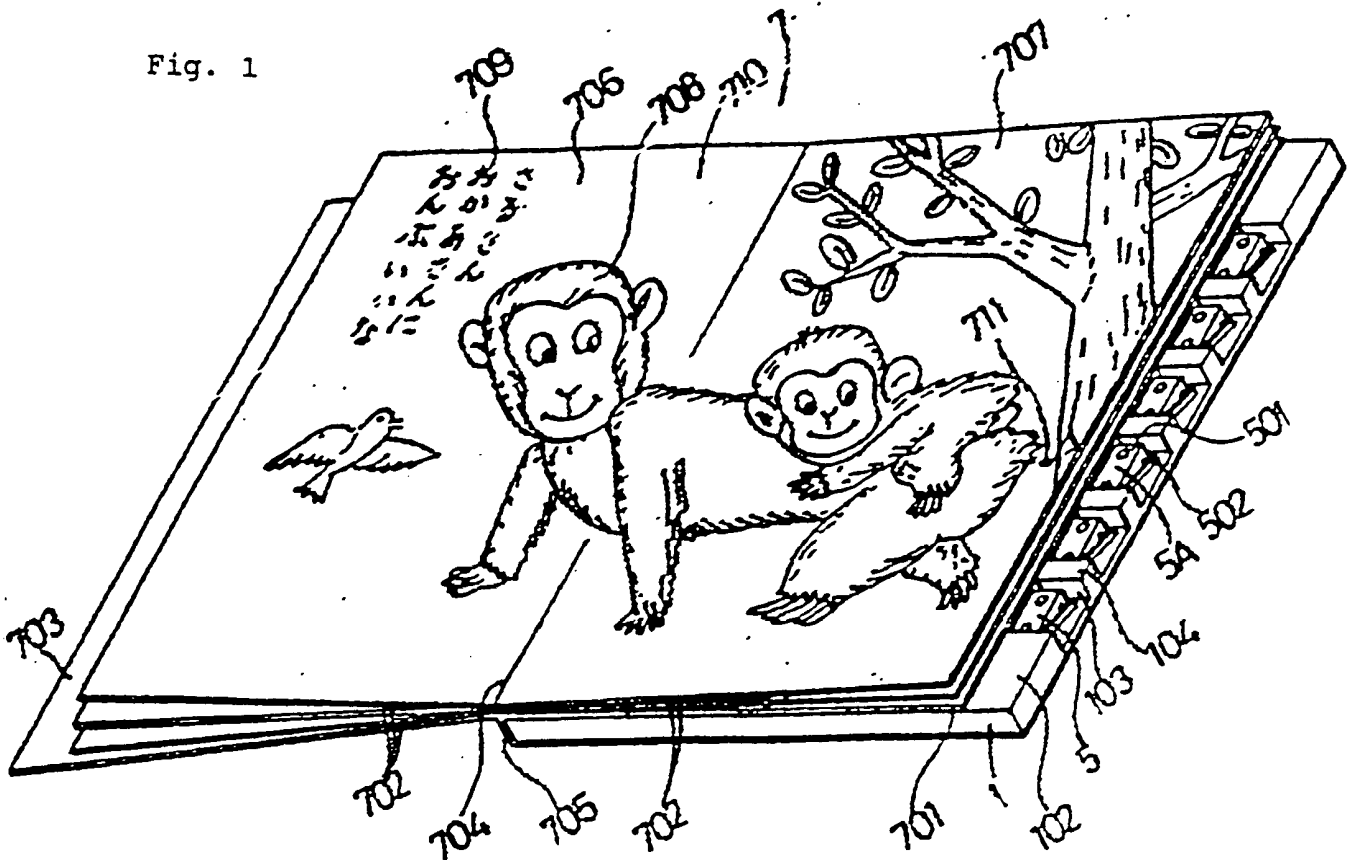
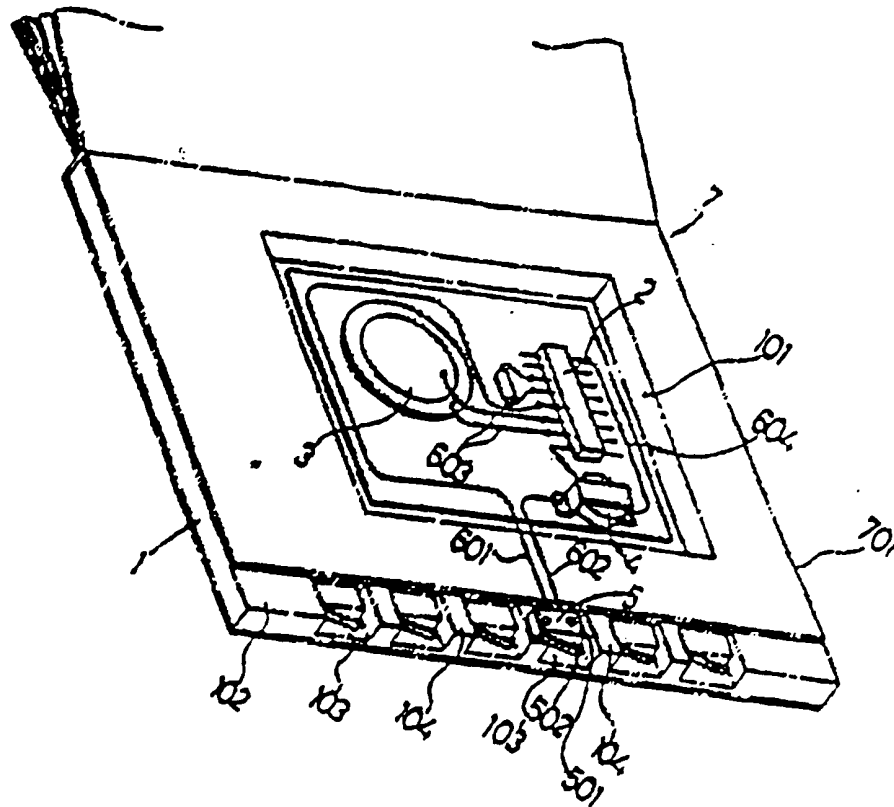


Fig. 2



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⑦考案の名称 音の出る絵本

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⑮参考文献 特公 昭38-17120 (J P, B 1)

# ⑯実用新案登録請求の範囲

複数の音楽、音声、言葉、或はこれらの組み合わせを記憶したICメモリ、圧電スピーカ、バッテリーを基板に設け、前記複数の音楽、音声、言葉、或はこれらの組み合わせに対応する絵や文を表示した複数の紙葉を見開き自在に設け、且つ基板に設けた複数のスイッチを紙葉の端部に沿って配設し、各紙葉の一部には前記各スイッチの対応するものを示す表示を付したことを特徴とする音の出る絵本。

## 考案の詳細な説明

本考案は電子オルゴールや電子音声発生装置等を組み込み紙葉毎に指示されたスイッチを操作することにより当該紙葉に関連する音楽を奏するようにした音の出る絵本に関するものである。

従来の音の出る絵本としては、各紙葉毎にソノシート（登録商標）を付設し、ソノシートを取り出して再生装置にかけて音楽に再生したり、或は各紙葉をシート状に個別に形成し、各シートの裏面に磁気録音帯を設け、一方表面には絵や文字を表し、絵や文字を視認しつつ音源や言葉を再生している。

以上の従来の絵本やシートは別途再生装置を必要とし、コスト的に不利であるとともに、幼児では操作することが難しく、幼児向けの絵本の音の

出しにくい。  
本考案は以上に鑑みなされたもので、その目的とするところは、幼児の操作でも簡単、確実に用いた紙葉（頁）に関連する音楽や小鳥の鳴き声、短い言葉、或はこれらの組み合わせを奏せしめ、幼児の絵に対する興味と音楽に対する興味を幼児の操作で同時に満足せしめ得る如くし、幼児の知育発達上、情感教育上優れた音の出る絵本を提供するにある。

10 以上の目的を達成するため本考案は、厚みを有する基板に複数の音楽、音声、短い言葉、或はこれらの組み合わせを記憶したICメモリ、圧電スピーカ、バッテリーを組み込み、前記複数の音楽等に対応する絵や文を記載した複数の紙葉を見開き自在に設け、且つ紙葉の一端部には基板に設けた複数のスイッチを紙葉の高さ方向に配設し、各紙葉の端部には前記各スイッチの対応するものを示す符号を付したことを要旨とする。

次に本考案の好適一実施例を添付図面に従って詳述する。

第1図は本考案に係る絵本を見開き状態にした斜視図、第2図は演奏装置を示す透視斜視図である。

方形で厚板状の基板1には凹部101を設け、この縦長の外端部102には上方、且つ外方に開放された凹部103…を長さ方向に間隔して複

敷設け、凹部103…はこの間の突部104…で相互に区画される。凹部101内には電子オルゴールの発音素子をなすICメモリ2、圧電スピーカ3、バッテリー4を設け、又外端部の凹部103…内にはスイッチ5…を夫々に設け、スイッチ5は接点を内装した本体501と押圧スイッチノブ502とからなり、かかる各スイッチ5…はリード線601、602でバッテリー4、ICメモリ2に接続され、ICメモリ2は圧電スピーカ3とバッテリー4にリード線603、604を介して接続され、実施例は一つのスイッチの配線を示しているが、他のスイッチも同様に個々のリード線で上記と同様に接続されている。ICメモリは音楽、小鳥の鳴声等の声、短い言葉を記憶したものを、ICメモリを図では一箇示しているが、実際には複数の記憶素子を組み合せたものである。

以上の基板1の上面はスイッチ5…を備える外端部102を除いてシート701で覆われ、基板1は實質的には裏表紙を構成し、シート701は絵本の最終頁を構成しても良い。

基板1を裏表紙として複数枚のシート702…を背部で糊付等して見開き自在とし、最外側部を表表紙703とし、これらシート702…及び表表紙703の内端部704を糊付等し、基板1の内端部と併せて背表紙705を形成する。

シート702…は見開き状態で左右のページ706、707により絵本の紙葉710を構成し、これに幼児向の絵708及びこれに関連する文章709を表示する。かかる絵708、文章709は見開きの左右の頁を組として各シート毎に表示し、見開き状態の紙葉の数だけの音楽をICメモリに記憶し、前記スイッチ5…はこの数だけ備える。紙葉710のスイッチ5…側の端部表面には符号711を表示し、符号711は見開き状態の当該紙葉の音楽を演奏するスイッチ5Aと対向する如く表示され、符号711は各紙葉毎に異なる位

置で各紙葉のスイッチと対応する位置に表示されている。

以上により絵本7を構成する。

次に作用、効果を述べると、絵本7を開き、例えば第1図の頁を開いて幼児は絵708を見、又文章709を読み、内容を理解する。かかる見開き状態の紙葉710の図では右端に符号711が表示され、これを指示符号として当該符号711と対応するスイッチ5Aのノブ502を押す。これにより既述のICメモリの当該記憶再生回路は閉成され、スピーカ3を介して再生された音楽は拡声され、当該紙葉の内容と対応する演奏を聴くことができる。尚一度スイッチを押すと最終迄再生を行う。ICメモリは複数の音楽を記憶しており、紙葉を繰って符号と対応するスイッチを押すことにより順次紙葉の表示内容と関連する音楽を再生することができる。

以上実施例は音楽の再生として説明したが、小鳥の鳴声等の動物の鳴声、短い言葉も可能であり、これらを組み合わせて各紙葉毎に音楽や鳴声、言葉を対応する如く再生しても良い。

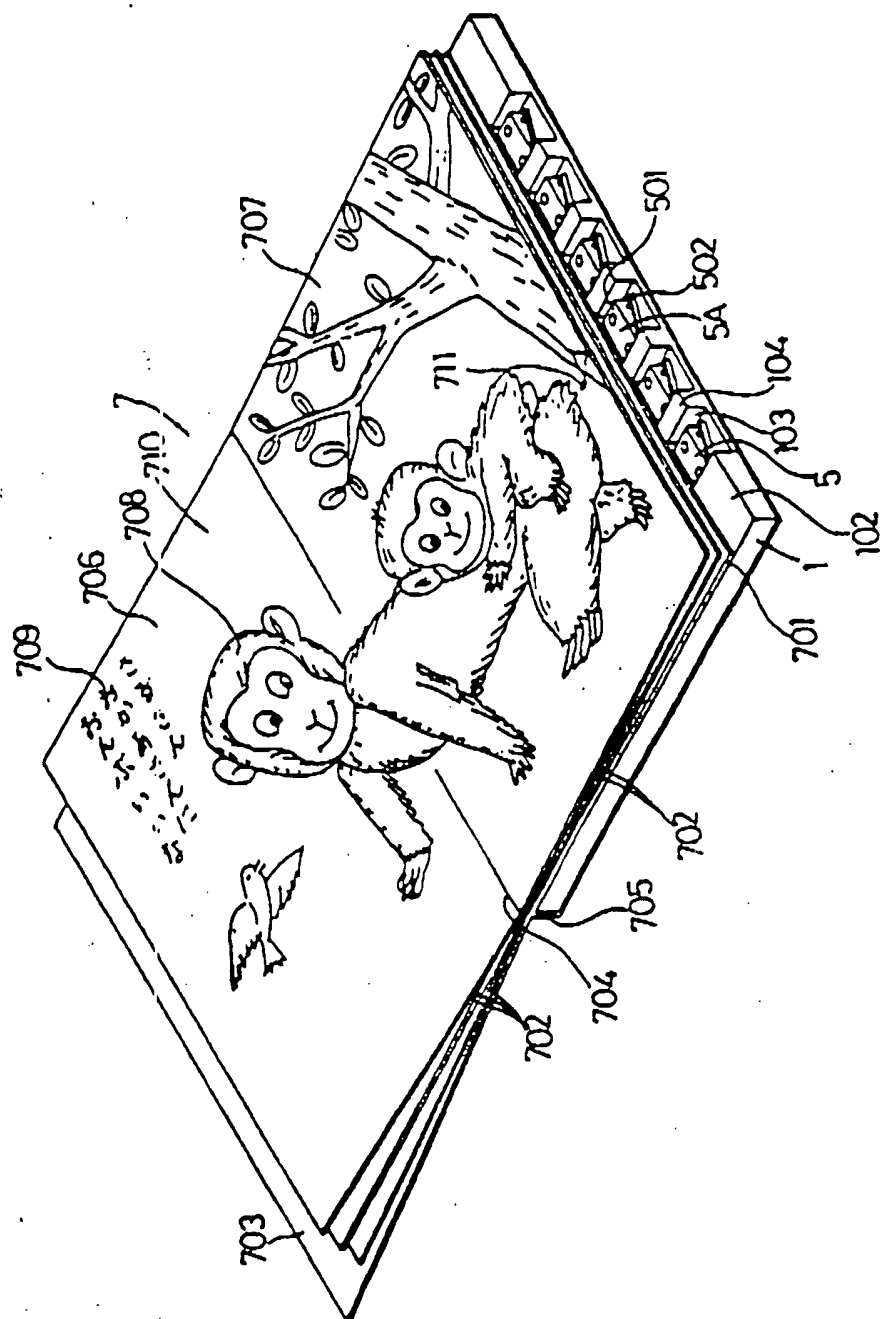
以上の如き本考案によれば、幼児が絵本として絵及び文章を見ながらこれの内容と関連する音楽等を再生して聴くことができ、幼児の知育発達上、教育上好ましく、以上を幼児自身が符号を見てスイッチを押すという簡単な操作で行え、幼児自身の手で絵本を見ながら音楽等を聴くという知育発達上好ましい行為を簡易に企図することができる。

### 図面の簡単な説明

第1図は絵本の見開き状態の斜視図、第2図は再生装置の透視斜視図である。

尚図面中1は基板、2はICメモリ、3は圧電スピーカ、4はバッテリー、5はスイッチ、7は絵本、708は絵、709は文章、710は紙葉、711は表示である。

第1圖



第2図

